

# **BHARATI VIDYAPEETH DEEMED UNIVERSITY**

(Established u/s 3 of UGC Act 1956, vide notification no. F9. 15.U.3 of Govt. of India )

## **COLLEGE OF PHYSICAL EDUCATION**

Dhankawadi, Pune-411 043 (Maharashtra), Tel.020-24373741

**REACCREDITED 'A' GRADE BY NAAC**



## **Master of Philosophy (M. Phil.) In Physical Education**

**CURRICULUM FRAMEWORK  
(2009-2010)**

# **BHARATI VIDYAPEETH UNIVERSITY**

## **Relevant Rules for Degree of**

### **Master of Philosophy (M. Phil.)**

#### **In Physical Education**

#### **1. Status :**

The M. Phil. Degree shall have the status of an intermediate Degree between the first Post-Graduate degree and Doctorate Degree. It will have both research and course components and will give the student adequate background for advanced research.

#### **2. Learning Outcome**

- i.** The course would equip students of Gujarat with necessary qualification for lecturer in a college/ secondary teacher or principal / higher secondary teacher or principal.
- ii.** Use online resources, libraries, databases etc.
- iii.** Create/prepare research papers for Sports and Physical Education
- iv.** Present and publish research papers in field of Sports and Physical Education.
- v.** Research scholar comes out with his/her original research or translation under the guidance of respected faculties in the second term. 9 Documentation skills.
- vi.** Knowledge of Sports Medicine, Sports Psychology, Sports Sociology and Sports Management.
- vii.** Organize and participate in seminar, workshop, symposia, conference etc.
- viii.** Participate in group discussions.

#### **3. Eligibility and Admission :**

An applicant seeking admission to the M. Phil. Course must have obtained a Master's Degree in Physical Education from this or any other recognized University.

Admission to the M.Phil. course shall be made on the basis of :

- 1) Satisfactory performance at the Masters Degree examination in Physical Education; and
- 2) The performance at a test conducted by the College / University concerned.

#### **4. Duration of the M.Phil. course :**

The M.Phil. Course can be done either on a full-time or on Vacational basis depending upon the availability of the programme in the College.

##### **(a) Full-time course:**

- 1.** The duration of the full-time M.Phil. course shall be 12 months.
- 2.** A full-time M.Phil. Student shall attend lectures, tutorials, practicals and seminars and must complete to the satisfaction of the institute.
- 3.** Although the duration of a full-time M.Phil. Course shall be for 1 yr., which can be maximally extended up to 2½ yrs from the date of admission to complete dissertation and after which the admission shall stand cancelled. In such a case, the student has to take fresh admission.

##### **(b) Vacational course :**

- i.** The vacational M.Phil. course shall extend over a period of 24 months (2 years). Such a Vacational M.Phil. student shall have to attend a minimum period of 4 months for his studies at the College / M.Phil. Centre. Like a regular student, a vacational student also may be permitted to complete his dissertation within the period of 2½ years from the date of admission. The facility of vacational M.Phil. course shall be restricted to teachers of any institutions.
- ii.** A student of vacational M.Phil. Course must attend lectures, tutorials, practicals and seminars for at least two months in a year to the satisfaction of the institution.
- iii.** The criteria for granting admission to the Vacational M.Phil. programme will be as follows :
  - a.** First preference will be given to the lecturers who are working in Universities and Colleges as per the merit of previous examination.
  - b.** Second preference will be lecturers of Junior College or School teachers.
- iv.** The duration of a vacational M.Phil. Course shall be for 2 yrs., However it can be extended up to 2½ yrs with the prior permission of the University authorities.

#### **4. Content:** - This course shall be divided into two parts-

**Part A** - Theory Paper (3 papers i.e., 2 compulsory & 1 optional).

**Part B** - Research Project (Dissertation, Seminar & Viva-Voce).

## 5. Evaluation :

- i. The evaluation of the performance of the student will be a continuous process and performance will be evaluated by the concern guide.
- ii. The dissertation will be evaluated by the guide of the candidate and an external referee appointed by the University authorities on recommendation of the principal.
- iii. Seminar and Viva-voce will be based on the dissertation. The evaluation of the final seminar and the viva-voce test will be done by a **committee** consisting of the following :
  - a. One expert (who is a senior research guide for Ph.D. of this or any other university) to be nominated by the Head/Professor-in-charge of the Institute;
  - b. The dissertation supervisor;
  - c. The Head of the Institute, who will act as Chairman of this Committee.
- iv. The following grade will be awarded to a student on the basis of marks obtain by him in the final exam as follows:

<b>Percentage of Total Marks</b>	<b>Grade</b>
50% & above but less than 55 %	“C” Grade
55% & above but less than 60 %	“B” Grade
60% & above but less than 65 %	“B”+ Grade
65% & above but less than 70 %	“A” Grade
Above 70%	“O” Grade / Outstanding

- v. In case a student fails in dissertation by not getting required marks for passing. The same dissertation may be sent to second examiner for evaluation. Even after second time evaluation, if the student fail he/she may be asked to resubmit the dissertation

with the suggestions and modification given by the examiners. He can resubmit and appear for final examination.

- vi.** All interested persons can attend the seminar and the viva-voce examination which will constitute the defense of the dissertation and they shall have the right to ask questions and participate in discussion on the dissertation. The chairman of M.Phil. Evaluation committee shall exercise his/ her discretion to allow or not to allow a question. However, the members of the audience at the defense shall have no right to express their opinion on the suitability or otherwise of the dissertation for the award of the M. Phil. Degree.

## **M. Phil. Structure**

**(Regular Course:- 1 yr. / Vacational Course:- 2 yrs.)**

**Intake: - 30 Students for each course**

**Structure of M. Phil.:-** This course shall be divided into two parts

Part A - Theory Paper

Part B - Research Project

### **Examination:**

#### **Part A:** Structure of Theory Paper

<b>Sr. No.</b>	<b>Paper Name</b>	<b>Optional / Compulsory</b>	<b>Theory / Practical</b>	<b>Marks</b>	<b>Min. Marks</b>	<b>Min.% of Passing</b>
01	Research Processes in Physical Education	Compulsory	Theory	100 Marks	40 Marks	50%
02	Advanced Statistics & Computer Application to Physical Education	Compulsory	Theory	100 Marks	40 Marks	
03	Yoga and Sports Achievement	Optional	Theory	100 Marks	40 Marks	
	Training method and applied Mechanics	Optional	Theory	100 Marks	40 Marks	
	Measurement & Evaluation in Physical Education	Optional	Theory	100 Marks	40 Marks	
	Sports Medicine	Optional	Theory	100 Marks	40 Marks	
	Exercise Physiology	Optional	Theory	100 Marks	40 Marks	
	Sports Psychology	Optional	Theory	100 Marks	40 Marks	
				<b>300 Marks</b>	<b>120 Marks</b>	

## Part B: Structure of Research Project

### 1. Dissertation / Thesis:-

Dissertation / Thesis shall be evaluated by both internal and external examiners for 100 Marks (i.e., Internal 50 Marks and External 50 Marks).

### 2. Seminar Presentation:-

Seminar Presentation shall be an open defense system, and will be evaluated by a three-member Committee which will consist of the Head of the Institute as Chairman of the committee, internal examiner and any one subject expert (Preferably a Ph.D. guide)

### 3. Viva Voce:-

Viva-voce shall be evaluated by a three-member Committee which will consist the Head of the Institute as Chairman of the committee, internal examiner and any one subject expert (Preferably a Ph.D. guide).

### Structure of Research Project:-

Sr. No	Research Project	Internal	External	Full Marks	Min. Marks of Passing	Minimum % of Passing
01	Dissertation/Thesis	50 Marks	50 Marks	100 Marks	40 Marks	50%
02	Seminar Presentation	50 Marks	50 Marks	100 Marks	40 Marks	
03	Viva - Voce	50 Marks	50 Marks	100 Marks	40 Marks	
		150 Marks	150 Marks			
	<b>Total</b>			<b>300 Marks</b>	<b>120 Marks</b>	<b>150 marks</b>

### STRUCTURE OF OVERALL MINIMUM PASSING MARKS:

Sr. No.	Name of Part	Total Marks	Minimum Passing Marks
01	Part "A"	300	150
02	Part "B"	300	150
Total		600	300

**STANDARD OF PASSING:**

- A student has to obtain minimum 40% Marks in each THEORY PAPER of Part-A and 50% marks in aggregate in Part-A total, also students has to obtain 40% marks in each a) Dissertation b) seminar & c) Viva-voce and 50% marks in aggregate in Part B
- If a student fails to get less than 50% marks in overall aggregate in theory, he / she may apply again in *one or more theory subject* to obtain 50% marks in Part-A.
- If any student fails to get 50% marks in Part-B (Dissertation / Seminar Presentation / Viva Voce), he / she has to reappear either in Seminar or Viva Voce or both to get 50% marks for passing in part-B.

**AWARDS OF GRADE:**

The following grade will be awarded to a student on the basis of marks obtain by him in the final exam as follows:

<b>Percentage of Total Marks</b>	<b>Grade</b>
50% & above but less than 55 %	“C” Grade
55% & above but less than 60 %	“B” Grade
60% & above but less than 65 %	“B”+ Grade
65% & above but less than 70 %	“A” Grade
Above 70%	“O” Grade / Outstanding

**System of Dissertation / Thesis Submission:**

The M. Phil. Course must be completed within 2½ years from the time of admission; otherwise the admission is treated as cancelled. In such a case, the student has to take fresh admission.

Students can submit their dissertation any time during the session. The dissertation will be sent to an expert for evaluation and Viva-voce will be conducted accordingly. After receiving the marks, the university will declare the final result.



**PATTERN OF QUESTION PAPER:  
M. Phil. Question Paper Structure**

Subject: - .....

Day: -

Time:-

Date: -

Marks:- 100

**N. B.** 1. Attempt any 04 questions from Q. No. 01 to 06

2. Q. No. 07 is **COMPULSARY**

01. ....(20)

02. ....(20)

03. ....(20)

04. ....(20)

05. ....(20)

06. ....(20)

07. Write to Short Note (Any Four) (20)

a) .....

b) .....

c) .....

d) .....

e) .....

f) .....

### Time Table of M. Phil. Examination

Paper No.	Subject	Full Marks	Day & Date	
			Regular Course	Vacational Course
Paper I (Compulsory)	Research Process in Physical Education	100	Monday 21 <sup>st</sup> June 2010	Monday 18 <sup>th</sup> June 2012
Paper II (Compulsory)	Advanced Statistics and Computer Application to Physical Education	100	Tuesday 22 <sup>nd</sup> June 2010	Tuesday 19 <sup>th</sup> June 2012
Paper III (Optional)	Yoga & Sports Achievement	100	Wednesday 23 <sup>rd</sup> June 2010	Wednesday 20 <sup>h</sup> June 2012
	Thesis/Dissertation (Submission)	100	Monday 03 <sup>rd</sup> May 2010	Monday 03 <sup>rd</sup> May 2012
	Final Seminar (Research Thesis)	100	7 <sup>th</sup> June 2010 To	4 <sup>th</sup> June 2012 To
	Viva-Voce (Research Thesis)	100	10 <sup>th</sup> June 2010	9 <sup>th</sup> June 2012
		600 Marks		

## **Syllabus For Master Of Philosophy (M. Phil.)**

### **Compulsory paper – I: - Research Processes in physical education**

Learning outcomes

1. Identify the research problem in the field of physical Education and sports
2. Know to Summarize the various research literature
3. Understand and apply the basics of statistics in research
4. Organize the samples and sampling techniques which is relevant to the study.
5. Apply the systematic methods in writing research thesis

#### **Unit I: - Introduction**

Meaning nature and scope of research importance of research in general and With special reference to physical education and sports Characteristics of research and research worker.

#### **Unit II:-**

Basic, Applied and action research-their relationship and difference.  
Importance and methodology of research.

#### **Unit III:-**

Place of research in university, Historical perspective, relation to graduate study,  
Organization & financing of research, problem of university sponsored research.

#### **Unit IV:- The Problem**

Located the problem – selection of problem  
Developing problem statement  
Meaning and significance of Hypothesis  
Type of hypothesis

#### **Unit V:- Non-Laboratory Research Techniques**

Historical Research  
Meaning and significance of Hypothesis

Examining validate of historical data

Principal of historical criticism

Pitfalls in historical Research

**Unit VI:- Philosophical studies.**

Meaning and significance.

Methodology of philosophical research.

Critical thinking continuum.

**Unit VII : - Descriptive studies – Board survey**

Questionnaire, Opinion ire and interview techniques.

Case studies and profiles.

**Unit VIII:- Laboratory Research**

Experimental designs.

**Unit XI:- Experimental Methods**

Control of Experiment Factors.

Principals of Experimental Enquiry (Mill's Canons)

Establishing a research Laboratory

**Unit X:- Research Report**

Deference between abstract, Research proposal & research reports.

Format of research reports

Table and Figures.

Footnote and Bibliography

**Reference Books:**

1. John w. Best Research Education (Fourth Ed.) New Delhi, prentice Hall of India.
2. M.L. Kamalesh- Methodology of research in physical education. New Delhi, 1994
3. R.H. Whitney, Techniques of research.
4. Good, Bar, Gatesw, Research in education.

5. Clark, David H. Clar. Harison H.: Research process in physical education.
6. Veit, Richard, Research – The students Guide. New York Macmillan publishing company, 1980.
7. Sadhu A.N., Sing Amarjit; Research Methodology In Social Sciences (Fourth Edition) Bombay Himalaya Publishing House-1998

## **Compulsory paper– II:- Advanced Statistics And Computer Application to physical Education**

### Learning Outcome

1. To equip the students to understand the basic of skills acquisitions of sports performance.
2. To make them understand the basic of skills and selected sports movement pattern
3. To enable them to understand the link between motor skills, ability, learning and performance
4. To familiarize the students with various theories improving and affecting the sports skills performance

### **Unit I :- Introduction to statistics**

Meaning – importance and need of statistics parametric and non parametric statistic.

**Unit II:-** Measure of central tendency – specific characteristics and use of central tendency

### **Unit III: Percentiles and quartiles –**

Meaning and importance – computation of percentiles and deciles.

### **Unit IV:- Measure of variability-**

Quartile deviation, mean deviation and standard deviation – Specific Characteristic and uses.

**Unit V:** Normal probability curve – principles and properties of normal curve

### **Unit VI: Analysis of variance :**

Need for analysis of variance – standard deviations of combined

Samples – one way analysis of variance – two way analysis of Variance post Hoc Tests of significance

### **Unit VII: Analysis of co-variance:-**

Need for co-variance. Application of analysis of co-variance, control of covariates.

**Unit VIII : Partial and multiple correlations :**

Meaning of partial correlation, First order part correlation – computation of partial standard deviation.

Meaning of multiple correlation computation of multiple correlation – Difference between multiple correlation.

**Unit IX : Prediction and Wherry – Doolittle method:**

Meaning of predication – Two Variables regression equations – Multiple regression equations.

**Unit X:- Wherry Doolittle method of multiple correlation.**

Unit XI Special Co relational and parametric methods:

Chi-Square

Rank – Difference method of correlation. Biserial Correlation

Phi-Coefficient, Contingency coefficient, Curvilinear, relationship

**Unit XII : Computer programmers with basic knowledge.****Reference Books:**

1. Ferguson, George A. Statistical Analysis in psychology and education (Fifth edi.) Singapore, Mc Graw-hill international Book Co.,1985.
2. Walpole Ronald E. Introduction to statistics (Third Edi) Macmillan publish co. Inc, New York 1982
3. Mendenhal, off Understanding statistics (Second Edi) Belmont california, Wadsworth publishing company Inc., 1976
4. Garrett, Henry E. Wood Worth R.S.; Statistic in psychology and education, Bombay, Vakil & sons Ltd. INDIA, 1981
5. Advance statistic by Clark & Clarke.
6. Steele Robert, and Torrid James A. Principles and procedure of statistics, New York, Mc Graw-hill Book CoM.,1960.
7. Garret, Harry E. and Wood worth R.S. statistic in psychology and education, Bombay, Allied Pacific Private Ltd. 1981

## **Optional Paper – Training Method and Applied Mechanics**

### **Part – ‘A’ Training Methods**

Learning outcome

1. Understand training as performance based science
2. Explain different means and methods of various training
3. Prepare training schedule for various sports and games
4. Appraise types of periodization for performance development
5. Create various training facilities and plans for novice to advance performers
6. Students will describe the features of Technical and administrative feasibility that should be considered when selecting test
7. Students will locate and select physical fitness and sports skill tests
8. Students will properly administer psychomotor tests

#### **Unit I :- Principals of training and Conditioning**

Type of training weight training, circuit training, interval, times

Running wind sprint, jogging miles, fartlek training.

Other factors: diet, sleep-rest musical ione and readiness

#### **Unit II :- Fitness**

Basic of physical fitness, basic physical characteristic fitness & training,

Emotional fitness and psychological training.

#### **Unit II :- Strength Development:**

Maximum strength, elastic strength, strength endurance, absolute and relative strength, external resistance and the athletes ability to express force, static muscular activity, dynamic muscular activity, strength development training

#### **Unit IV: Speed Development :**

Speed in Sports, Speed Development Training For Speed Development the Speed Barrier Endurance and Speed Training.

#### **Unit V : Endurance Development**

Training Method- Duratin-Repetirion Competition and Testing Endurance Sports.



**Unit VI: Mobility Development**

Mobility Classification Factors influencing Mobility Role of Mobility,  
Mobility Training: Mobility Unit Construction- Mobility Derivation.

**Unit VII:** Physiological Effort of Training:

**Unit VIII:** Training Schedules – Seasons and Levels-Concept of Trainer System  
Role of Trainer in Programmed Implementation.

**Unit XI:** Testing Processes & Tools Strength Speed- Endurance Vital Capacity  
Blood Pressure- Pulse rate. Apparatus Spire Meter Spignomono  
Meter-Lig Dynamo Meter-Intru Pulse Apparatus.

**Unit X:** The Erect or Drugs, Alcohol and Smoking on Performance.

**Unit XI:** Effect of climatic changes and High Altitude on Human Performance.

**Part-B Applied Mechanics**

**Unit I:** Nature and Scope of Applied Mechanics in Physical Education  
Movement Mechanics in the Body

**Unit II: a)** Concepts of Application of Mechanics in Sports Static and Dynamic  
Balance (Equilibrium).

Force-Movement of Force Centripetal and Centrifugal.

Force of Gravity, Spin and Friction, Impact -Leaves, Newton's

Laws of Motion Velocity and Action-Reaction types of Motion -Rotary  
and Linear Motion-Angular Kinetics, Linear Kinetics, Kinematics  
Linear, Kinematics Center of Gravity Falling Bodies. Path of  
Projection-Work Power and Energy.

**B)** Guiding Principles Derived From the Application of Above  
Mechanical Concepts.

**Unit III : Hydrodynamics constructions:**

Concepts & Application of Mechanics in Sports in the Aqua Media  
Flotation. Buoyant Force-Specific Gravity Center of Buoyancy-Rotative  
Motion Fluid Resistance-Gyro Scoping Action-Guiding Principles

Derived From the Application of the Above Mechanical Concepts in the Aqua Media.

**Unit IV: Aero Dynamic Constructs :**

Principal of Cinematographic Analysis-Application of Cinematographic & Video Analysis Motor Ideograms Avoidance of Errors of Measurements.

**Unit IV: Analysis dynamic constructions:**

Principal of cinematographic analysis – application of cinematographic & video analysis motor ideograms avoidance of errors of measurement

**Reference Books:**

1. Johnson C.R.Fisher, A.G.Scientific Basis of Athletic Conditioning. Philadelphia ,Lea Febiger1972.
2. Singh,H Sport Training General Theory and Method N.I.S., Patiala, 1984.
3. Singh, Hardayal,Science of Sports Trainig,New D.A.V Publications.
4. Fronce Wand Field,Dorothy Marking and John M.Cooper Track and Field fundamental for Girls & Women, London C.V.Mosby Company 70.
5. L. Matevan ,Sports Training U.S.S.R Publication, New Delhi.
6. Frank N. Dich. Sports Training Principles, London M Lepus Book Co.
7. Amol, Robert & Gaines, Charles Sport Talent New Zealand, Penguin Books.
8. Bunn, John W. Scientific Principal of Coaching Eagle wood Cliffs N.J. Prentice Hall.
9. Harre, Dierich Principles of Sports Training Berlin Sportverlag.

## **Optional Paper – Measurement And Evaluation In Physical Education**

### Learning outcome

1. Students will understand the concept of Test, Measurement, Evaluation and Assessment Procedure in Physical Education and give examples of each
2. Students will differentiate formative and summative evaluation, Process and Product evaluation
3. Students will identify the purposes of measurement and Evaluation
4. Students will describe the features of Technical and administrative feasibility that should be considered when selecting test
5. Students will locate and select physical fitness and sports skill tests
6. Students will properly administer psychomotor tests

**Unit I:** Meaning of the term Measurement and evaluation. Basic Principles & functions of measurements and evaluation – Brief history of Measurement in Physical Education –Place of measurement and evaluation in Phy.Edu.

**Unit II:** Critical of test selection – Scientific Authenticity, Reliability, Validity, Objectivity, Norms– Administrative feasibility & educational application

**Unit III:** Tests Classification – Standard test – Objective and Subjective tests. Construction of Tests: Knowledge tests (Written Tests) & Skill tests (Evaluation of knowledge test steps in constructions of knowledge & skill tests.)

**Unit IV:** Maturity, Nutrition Body Size and form \_ Nutrition – Evaluating Nutrition, Nutritional test evaluation body Dimensions – Somato types – Posture, Values Test of Antero Posterior Posture, Lateral Deviation and Spine foot measurement.

**Unit V:** Determination of Center of Gravity of the human body – Graphic method, and Analytical rate, Respiratory Volume, Tidal Volume – Vital Capacity Audition & visual Reaction time, body fat, Grip Strength. Leg Strength & Flexibility.

**Unit VI:** Strength test – Kraus Weber Muscular Tests – Rogers Physical Fitness, Index Suggested Changes in the PFI test. Physiological fitness – Mc curdy Larson test of Organic efficiency cremation blood – piosis tests, Harvard step test, Kuper's 12 minutes continuous Run / Walk test.

**Unit VII:** Testing instrument– Expire Graph, Peak Flow meter chromatograph, Duckle method and Analytical method.

**Unit VIII:** Motor fitness – Oregon motor fitness test, California physical performance tests, revised AAHPER Youth fitness tests, Motor fitness tests of the armed forces. The JCR test, New York State Physical Fitness test, Purdue University Motor fitness test, Shafer Girl’s motor fitness test, Evaluation of motor Fitness test, sit-ups and chins. Inter relationship and self-scoring.

**Unit IX:** General motor Abilities – the concept of general motor Ability equating by specific activities, equating by general abilities, strength index – strength abilities of girls. MC Cloy’s General motor ability & Capacity test, Motor educability – LOWA Brace test. Explosive muscular vertical jump & standing broad jump.

**Unit X:** Measurement of social efficiency – MC Dolly’s behavior rating scale, Blascrchand’s scale, Cowell Social behavior trend index, social Acceptance Evaluation Socio metric Questionnaire. Measurement of general social Efficiency – Bell Adjustment Inventory, the Bereuter Personality Inventory. Cattails Sixteen personality Factor questionnaire & California psychological Inventory.

**Unit XI:** Measurement Programmes – Suggestions for administering tests. Test Personnel, time for testing – Economy of tables, Graphics exhibits Preparation of reports – Co-Operative measurement projects central New York State Projects, Oregon Pilot Physical fitness project.

**Unit XII:** Use of test in meeting the individual needs:

- a) Presentation, interpretation and use of test results.
- b) The teacher
- c) The student
- d) The parent
- e) The Administrator

### **Reference Book:**

1. Clarke, Harrison, Application of measurement to physical Education, Englewood Cliffs, New Jersey: Prentice Hall’76

2. Mathews, Donald K. Measurement in physical Education Philadelphia, London W.B. Saunders co.'58.
3. Margaret H. Safrit, Evaluation in physical education Englewood cliffs, New Jersey: prentice Hall Inc. '81.
4. Barry L. Jonson and jack N. Nelson practical measurements for evaluation in physical education. Delhi: Surjeet Publication.

## **Optional Paper:- Sports Medicine**

### **Learning Outcome**

1. Perform and report on the exploratory analysis of data collected using sports technology
2. Analyze sporting data of various types via astute use of statistical packages.
3. Practice mathematics, statistics, information technology in sport technology related problems.
4. Support a conclusion based upon quantitative prediction, performance and analysis of a sporting team, code, or gaming environment

**Unit I:** - History of sports medicine – its definition aims and objective, nature and functional utility- preventive, curative and rehabilitative aspects.

**Unit II:-** Concept of physical fitness – specific fitness- definition and components of physical fitness.

**Unit III:-** Physiological, pathological and psychological problems of sportsmen before, during and after competition.

**Unit IV:-** Thermo-regulation and sports: Fluid balance, Climatic ant tomes and their possible effects on the physiological function – Heat Exhaustion, Heat camp, Heat stroke, Exposure, Mountain Sickness-High altitude & its effects on performance,

**Unit V:-** Nutrition and Hygiene : Athletic nutrition and malnutrition high calorie diets, Role of vitamins, Minerals, Salts Carballydrate protein, fat loading before tournament, Hygiene of sportsmen Athletes foot, ringworm etc. Importance and need of immunization

**Unit VI:-** Roll of Skills rule and regulation in the prevention of sports injuries and early rehabilitation.

**Unit VII:-** Regional and specific injuries in track and filels and ither major games and their management

**Unit VIII:-** Common injuries and their management

**Unit IX:-** Somato types, physique and performance.

**Unit X:-** Women in sorts: Special problem of female athlete.

**Unit XI:-** Aging and Sports

**Unit XII :-** Sports physiotherapy: History of massage, definition, Muscle relaxations an aid to massage factors to be considered in including relaxation – points to be considered in giving massage - classification, contra indication – effects & uses Hydrotherapy, sauna bath , Electrotherapy & exercise therapy – Sports therapy- Sports therapy.

**Unit XIII:** At tapping and supports – safety gadgets in sports and games.

**Unit XIV:** Drugs and doping: Ergogenic – Artificial aids, Anabolic substances its use and amuses in sports, its effects and dangers.

**Unit XV:** Evaluation in sports medicine – Biometrics – measurement analysis interpretation for evaluation & performance – selection – prediction.

**Reference Books:**

1. Peter G. Stroke A Guide to Sports Medicine Churchill Livingston. Edinburgh, London.79.
2. Armstrong and Trckter injuries and sports London stampel press.
3. Dolon J.P. Treatment an prevention of Athletic injuries.
4. Johnson W.R. science and medicine of Exercise and sports, New York, Harper and Smither Publisher.
5. Encyclopedia of sports science and medicine London: Edward Arnold publish.

## **OPTIONAL PAPER – EXERCISE PHYSIOLOGY**

Learning outcomes

1. Understand the basic principles of physiology and Exercise Physiology
2. Apply the knowledge in the field of physical education and movement activity.
3. Analyze the practical knowledge during the practical situation.
4. Remember and recall the definition of physiology and co-relate the principles of physiology.
5. Appraise the effects during the training and practical sessions

### **Unit I: Introduction and function of muscles:**

Classification of muscles, structure of muscles tissues, various theories of Muscular contraction, Hypertrophy of muscles in relation to physical activity.

### **Unit II: Neuromuscular Physiology:**

Neuron, motor units neuron muscular junction, Bio-electric Potential, Kinesthesia tone moisture and equilibrium.

### **Unit III: Bio-Energies:**

Fule for muscular work, energy for muscular contraction, Aerobic & Anaerobic systems. Inter relationship of aerobic and Anaerobic system with special reference to different activities Anaerobic – Threshold training.

### **Unit IV: Operational Dynamic:**

Physiological changes due to Exercise and training: Effect of exercise on various systems, - oxygen debt, second wind, micro circulation. Effect of Exercise and training on carbohydrates, Fat and protein metabolism- control of variables in training.

### **Unit V: Sports Ergonomics:**

Works capacity under different environmental conditions such as hot, humid, cold and high altitude.

### **Unit VI: Sports Nutrition:**

Physiological consideration of diet in relation components, quantities and significance, sports and diet, diet before during and after competition Glycogen boosting – calorie calculator. Determination of energy cost of various sports activities.



**Unit VII:** Sex differences and sports.

**Unit VIII:** Effect of smoking, drinking, drugs and athletic performance, Dope Testing.

**Unit IX:** Aging and Exercise, Basic principles and guidelines for construction of cardio respiratory endurance exercise for the aged.

**Unit X: Physical conditioning:**

General principles of physical training, development of muscular strength and local endurance, development of Aerobic & Anaerobic endurance.

**Unit XI:** Functional tests E.M.G. Instrumentation.

**Unit XII: Physiology for the physically handicapped**

- a) Neuro Muscular condition
- b) Skelete – Muscular condition.
- c) Cardio – Muscular condition

**Reference Books:**

1. Astrance: P.P. and K.Rodhal Text Book of work physiology, New York, MCGraw book company.
2. Berger, A.R. applied Exercise physiology, Philadelphia lea and Febiger.
3. Clarke, David N. Exercise physiology, Eaglewood cliffs, New Jersey, Prentice
4. Curbain T.K. The physiological Effects of Exercise programmed on Adults, springfield: Charles C. Thomas Publisher.
5. Da Vriv H.A. Physiotoy of exercise far physical education and Athletic, Staples press, condon,1976.
6. Karpovioh, P.V. and Siuning W.R. Physiology, New Delhi: Surjeet Publications.
7. Shaver L.G. Essentials of exercise physiology of muscular Activity.
8. Noble Bruce J. Physiology of exercise and sports, saint Louis: Time / Mirror / Mosby college publishing.
9. Sundarajan G.S. Sports Medical Lecturers, Madars, Rasha Publications.
10. Welsh R. Peter and Roy J. shafer (Eds) Current Therpy in Sports Medicine, Toronto: B.C. Becker Inc.

## **Optional Paper :- SPORTS PSYCHOLOGY**

Learning outcomes

1. Understand the basic principles of physiology and Exercise Physiology
2. Apply the knowledge in the field of physical education and movement activity.
3. Analyze the practical knowledge during the practical situation.
4. Remember and recall the definition of physiology and co-relate the principles of physiology.
5. Appraise the effects during the training and practical sessions

**Unit I:** The History and Development of Sports Psychology.

**Unit II:** Psychology and play  
Traditional theories of play  
Twentieth Century theories of Play

**Unit III: Psychology of motor learning.**

Measuring of the term, perceptual motor learning the retention of motor skills transfer of skill, measurement of learning, and learning curve, Attention and its role in learning motor skills.

**Unit IV: Children in Sports:**

Early Psychological experience, motivation of children in sport emotions of Children in sport, child and coach, children and competitive sports.

**Unit V:** Women in sport – issues and controversies.

**Unit VI:** Physical activity and the psychological development of the handicapped.

**Unit VII: Personality of sportsmen and coach:**

Nature of personality, the issue of heredity in personality, personality traits of sportsmen, assessment of personality traits of the coach and his personality.

**Unit VIII: Motivation in Sport:**

Theories in/ or/ motivation, achievement motivation, level of aspiration and achievement, methods and assessing aspiration level, motivation and participation in physical activity dropouts in sports.

**Unit IX: Socio psychological dimension of sport:**

Sport performance in groups, team cohesion, socio metry in sport, leadership sport, sport audience and their effect on performance.

**Unit X: Psychology of competition:**

Psychological characteristics of pre-during and post competition (Anxiety, fear, frustration) Mental training, Psychological preparation for competition – Autogenic training.

**Unit XI: Psycho Dynamics in sports:****Unit XII:**The Evaluation of the superior Athlete:

- a) Typology of Athletics activities based upon their Psychological demands.
- b) Personality assessment.
- c) Assessing the Athlete through field tests.
- d) Motivate of superior athletes.
- e) Psychological preparation of the superior athlete.

**Unit XIII: Aggression and performance:**

- a) Theories of aggression
- b) Aggression in Athletic competition
- c) Sex difference in Aggression
- d) Instruction in Aggression

**Unit XIV: Activation:**

- a) Basic research findings
- b) Activation in sports, research findings
- c) Method of adjusting activation levels of Athletes.

**Reference Books:**

1. Vanke Miroave: Bryant Cratty J. 'Psychology and the Superior Athletic' The Mamillian Co. London.
2. Craty Bryant, 'Psychology in Contemporary Leadership' Englewood cliffs: prentice – Hall Inc. New Jersey.
3. Bruin Richard, 'Psychology in sports methods and application' Collarada state University, Fort Williams, Colorado, Surjeet Publications, Delhi.
4. Lee Wakyn Tackh, Judy Al Bliner, 'Psychology of coaching,Theory and application' Florida International University, Miami Florida Reprinted by Surjeet Publications, New Delhi.
5. Gratty Bryant, 'Movement Behavior and Motor Learning' Philadelphia: Lea and Febiger, 1989.
6. Gratly Bryant J. Career Potential in Physical Activity. Englewood Cliffs, New Jersey's Prentice Hall Inc.

7. Gratly Bryant **Psychology in contemporary sports**. Englewood Cliffs, New Jersey, Prentice Hall Inc.
8. Singer Robert N. **Motor Learning and human performance**. New York Mc Graw Hill Company, 1975.
9. J.N. Schultz and W. Luther '**Autogenic Therapy**' Grune and Stration New York.
10. Cox Richard H. 'Sport Psychology conepts and application' MC Graw Hill, New York.

**Optional Paper: Yoga and Sports Achievement:**

**Subject Outcome:-**

1. To understand the concept and nature of yoga along with its historical background.
2. To gain knowledge regarding the application of yoga to Physical Education and Sports.
3. To understand the anatomy and Physiology of Asanas and Pranayamas.
4. To acquire the skills needed to understand and to overcome environmental problems.
5. To gain knowledge regarding the effect of yogic practices on health aspects.

**Unit I: Understanding of Yoga:**

- Yoga – Definition of Yoga – steps, Asana: Definition of objectives, aims.
- Pranayama – Definition, Aims & Objectives, Mechanism of Pranayama.
- Kriyas, Bandhas, Mudras.
- Ardinal Principles of Yoga practives.

**Unit II: Philosophical Foundation of Yoga**

- Yogic Texts & Yoga Philosophy
- Patanjali Yoga.
- Yoga, Mysticism & Cultural Synthesis.

**Unit III: Scientific Foundation of Yoga**

- Various physiological systems in the body.
- Deep Breathing, Normal breathing – pranayama breathing
- Scientific explanation of Asana & Exercises.
- Physiological implications of different yogic practices.

**Unit IV: Yoga Psychology & Mental Health**

- Meaning & nature
- Characteristics of mental health in western Psychology and Yoga.
- Interpretation of Psychological disturbance in terms of Yoga.
- Mechanism of Patanjala Yoga in controlling psychosomatic disorders.

**Unit V: Yoga, Health & Fitness**

- Health related fitness
- Role of yoga in health & fitness
- Non-slip dominance in relation to health, fitness and performance
- Injuries in yoga & remedies

**Unit VI: Yoga Diet**

- Philosophy of Yoga diet.
- Process of Eating
- Balance diet & concept of Ahara (Svattik, Rajasik, Tamasik)
- Diet & Behavior

**Unit VII: Yoga Practical's (as suggested by Swami Kuvalayanada)**

- Short course of Yoga
- Easy course of Yoga
- Full course of yoga

**Unit VIII: Yoga Practicals**

- Methods of Teaching & Learning
- Yoga Lesson Planning
- Practice Teaching (One Lesson)

**Reference Book:**

1. Pal Satya, 'Yogasana and sadhana' Pustak Mandal, Delhi.
2. Nagendra H.R. 'Yoga and Cancer' Swami Vivekananda Yoga Prakashan, Bangalore.
3. Narendran Shamanthakamani. 'Yoga for Pregnancy' Swami Vivekananda Yoga Prakashan, Bangalore.
4. Nagarathana R. 'Yoga for Arthritis' Swami Vivekananda Yoga Prakashan, Bangalore.
5. Nagarathana R. 'Yoga for Anxiety and Depression' Swami Vivekananda Yoga Prakashan, Bangalore.
6. Srikanta S.S. 'Yoga for Diabetes' Swami Vivekananda Yoga Prakashana, Bangalore.
7. Nagarthana R. 'Yoga for Digestive Disorders' Swami Vivekananda Yoga Prakashan, Bangalore.
8. Nagarthana R. 'Yoga for Hypertension and heart diseases' Swami Vekananda Yoga Prakashan, Bangalore.
9. Nagrthana R. 'Yoga for Asthama' Swami Vivekananda Yoga Prakashan, Bangalore.

10. B.K.S. 'Light on Pranayama pranayama Dipika' Harper Collins, New Delhi.